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EXAMINER

PHAM, HUNG Q

ART UNIT PAPER NUMBER

2162

DATE MAILED: 06/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/043,949

Applicant(s)

BELLEW, MATTHEW A.

Examiner

HUNG Q. PHAM

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 9-19 and 28-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8, 20-24, 26 and 27 is/are rejected.
- 7) ☒ Claim(s) 6 and 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

- Claims 5, 6, 25 have been amended. The objection of claims 5, 6 and 25 has been withdrawn.
- Claim 1 has been amended. The rejection of claim 1 under 35 U.S.C. § 101 has been withdrawn.
- Claims 7 and 26 have been amended. The rejection of claims 7 and 26 under 35 U.S.C. § 112 has been withdrawn.
- Applicant's arguments with respect to the rejection of claims 1 and 20 under 35 U.S.C. § 112 have been fully considered and are persuasive. The rejection of claims 1 and 20 has been withdrawn.
- Applicant's arguments with respect to the rejection under 35 U.S.C. § 102 have been fully considered but they are not persuasive.

(1) As argued by applicants at pages 18 and 19:

In contrast to the one or more templates used in MANDAN, applicant respectfully submits that "generating on a computing system a SQL statement" in the present application is dynamically created to include "a FROM clause having a subquery creating a grouped derivative table" as recited in claims 1 and 20 of the instant application. Thus, the instant application is "creating" a grouped derivative table while MANDAN is "using" one or more templates...

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Clearly, MANDAN does not show "generating a SQL statement" including "creating a grouped derivative table" as recited in claim 1 and claim 20 of the instant application. Nor does MANDAN teach or suggest the use of "one or more JOIN clauses" including the corresponding one or more target tables to the created grouped derivative table as recited in claim 1 and claim 20 of the instant application.

Examiner respectfully traverses. The purpose of templates as disclosed by Mandan is to generate SQL statement, and the generated SQL below meets the requirement of the claimed invention.

```

SELECT distinguished_name.EID,                               /*header section */
store.AttrName, store.AttrVal
FROM attribute_store store, distinguished_name dn
WHERE
dn.EID IN (           /* FilterCondition header */
/* start group marker */
SELECT EID FROM et_lastname s12 /* template for subtree */
WHERE s12.AttrVal = 'Smith'      /* rooted at node 1418 */
UNION                    /* conjunction marker */
/* start group marker */
SELECT EID FROM et_firstname s12 /* template for subtree */
WHERE s12.AttrVal = 'Jim'        /* rooted at node 1418 */
INTERSECT                /* conjunction marker */
SELECT EID FROM et_manager s13, et_dept s14 /* template for */
WHERE s13.AttrVal like 'John%'    /* subtree rooted */
AND s13.AttrVal like '555%'        /* at node 1438 */
AND s13.EID=s14.EID
) /* end group marker */
/* end group marker */
) /* FilterCondition closing section */
AND (dn.parentdn like 'dn OR (dn.sda like :sdn
AND dn.parentdn like :pdn)
AND dn.EID=store.EID
AND dn.EID <= entryThreshold
ORDER BY store.EID

```

The generated SQL statement (Col. 26, Line 65-Col. 27, Line 25), includes a FROM clause at line 3, and has SELECT statement at the first line for creating a table comprising attributes from Distinguish Name Table and Attribute Store Table at line 3 as a *grouped derivative table*, the created table includes EIDs as *grouped non-looked-up table fields*, and table fields aggregated by AND operator at lines 21, 23 and 24 of SQL statement as *aggregated table fields*. The generated SQL statement also includes UNION command at line 9 as a *JOIN clause* joining

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Attribute Store Table at line 3 as *target table* to the created table from SELECT statement.

(2) In response to applicant's argument with respect to *parsing* as in page 18 that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., *the specification of the instant application clearly indicates on page 11, line 12... parse the input statement, e.g., tokenize the elements...*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

(3) As argued by applicants at pages 18 and 19 with respect to UNION and JOIN command:

*The penultimate paragraph on page 8, and the discussion pages 10 and 11 of the Office Action appears to improperly equate the use of UNION in MANDAN with "JOIN" clauses as recited in claims 1 and 20 of the instant application. As indicated by its name, a UNION command is used to select related information from two tables, much like the JOIN command. However, these commands are distinct and are defined to have different meanings. For example, in SQL when using the UNION command **only distinct values are selected and all selected columns need to be of the same data type.***

Examiner respectfully traverses. As disclosed in paragraph [0038] of the Specification, JOIN commands include OUTER join, INNER join, and UNION join. Thus, the UNION join in the SQL statement disclosed by Mandan meets the

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requirement as defined in the specification and claims 1, 20: *one or more JOIN clauses*.

(3) As argued by applicants at page 19:

The subtree condition of MANDAN merely provides the SQL equivalent of "I" or "&" as the conjunction marker, whereas the "one or more JOIN clauses" of the instant application are included when the conditional statement "if the data processing statement is determined to contain first one or more table fields to have aggregation operations performed on their row values" is satisfied as recited in claims 1 and 20.

Examiner respectfully traverses. As in claims 1 and 20, the clause *"if the data processing statement is determined to contain first one or more table fields to have aggregation operations performed on their row values"* is a condition of step generating, not for the JOIN clauses.

(4) As argued by applicants at page 19:

Moreover, as the pertinent portions of MANDAN, are primarily directed to the creation of an expression tree upon which preexisting templates may be applied, "parsing on a computing system a data processing statement" as recited in claim 1 and claim 20 of the instant application is also not expressly or inherently described "in as complete detail as is contained in the ... claim" as required by MPEP 2131.

Examiner respectfully traverses. Mandan teaches a method and system for generating SQL statement for an LDAP search filter as *a data processing statement*, and as disclosed at Col. 18, Lines 30-58 of Mandan, a LDAP search request from lines 30-36 as data processing statement is parsed. Thus, the claimed *parsing on a computing system a data processing statement* is anticipated by Mandan.

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(5) Applicants' argument with respect to the rejections under 35 U.S.C. § 103 is respectfully traversed with the reason as discussed above. Additionally, GROUP BY clause is a conventional command, and its purpose is for enumerating. Using GROUP BY to enumerate again the enumerated fields is obvious one of ordinary skill in the art.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 8, 20-23 and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Mandan et al. [USP 6,748,378 B1].

Regarding claims 1 and 20, Mandan teaches a method and an apparatus that can automatically generate a SQL statement for a LDAP search filter (Abstract) comprising:

parsing on a computing system a data processing statement (Col. 18, Lines 30-58, a LDAP search request from lines 30-36 as data processing statement is parsed to generate an expression tree as in FIG. 14B);

identifying on a computer system table field or fields referenced in said data processing statement, including whether an aggregation operation is to be performed on row values of each of the identified field (table columns referenced in LDAP are identified by header section of the template, e.g., EID, AttrName, AttrVal, (Col. 16, Lines 54-61), parent filter node type is examined to determine whether the INTERSECT or UNION operation will be utilized to aggregate the result of two sub tree conditions (Col. 20, Line 65-Col. 21, Line 9). Using the LDAP search request in Col. 18, Lines 30-36 as an example, the two sub tree conditions are 1414 and 1418. The UNION operation as aggregation operation is performed on the row values of AttrName and AttrVal, e.g., last name, Smith, first name, Jim (Col. 25, Lines 4-23));

for each identified table field, determining on a computing system whether the table field is a looked-up field (nodes of expression tree is examined to identify tables that have to be accessed (Col. 18, Lines 60-63), As further disclosed at Col. 18, Lines 66-Col. 19, Lines 5, AttrName, AttrVal of Attribute Store Table (FIG. 4) as *looked-up field* is determined to generate a header section as in of Col. 19, Lines 1-5);

identifying on a computing system a basis table of which non-looked up ones of said identified table field or fields are members (nodes of expression tree is examined to identify Distinguish Name Table of FIG. 7 as *basis table* and EID as *non-looked field*

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(as not specified in LDAP search request) is a member of Distinguish Name Table (Col. 18, Line 60-Col. 19, Line 5));

identifying on a computing system one or more target tables from which said looked-up one or ones of said identified table field or fields are to be looked up (nodes of expression tree is examined to identify Attribute Store Table of FIG. 4 as *target table* wherein AttrName, AttrVal are to be looked up (as specified in LDAP search request) at SELECT statement (Col. 18, Line 60-Col. 19, Line 5));

generating on a computing system a SQL statement (Col. 18, Lines 50-58),

including with said generated SQL statement

a FROM clause (the generated SQL, Col. 26, Line 65-Col. 27, Line 25, as below including a FROM clause at line 3 of SQL statement)

having a subquery creating a grouped derivative table comprising grouped non-looked-up table fields and aggregated table fields (the generated SQL below having SELECT statement at the first line for creating a table comprising attributes FROM Distinguish Name Table and Attribute Store Table at line 3 as *a grouped derivative table*, the created table includes EIDs as *grouped non-looked-up table fields*, and table fields aggregated by INTERSECT operator at line 13 as *aggregated table fields*),

and one or more JOIN clauses joining the corresponding one or more target tables to the grouped derivative table (the generated SQL statement below includes UNION at line 9 as a *JOIN clause* joining Attribute

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Store Table at line 3 as *target table* to the created table from

SELECT statement),

if the data processing statement is determined to contain first one or more table fields to have aggregation operations performed on their row values (the body of the SQL statement is generated by evaluating the search request in the form of expression tree to determine a node with one or more table fields (Col. 18, Lines 43-58), each node will have a corresponding SQL, and to have INTERSECT or UNION operation for aggregating the values (Col. 20, Line 65-Col. 21, Line 8)).

```

SELECT distinguished_name:ED,           /*header section */
size:ActName, size:ActVal
FROM shshshsh_store_name, distinguished_name da
WHERE
da.ED IN (           /* FilterCondition header */
/* start group marker */
SELECT ED FROM ci_lastname a1           /* template for subtree */
WHERE a1.ActVal = 'Smith'               /* rooted at node 1416 */
UNION           /* conjunction marker */
/* start group marker */
SELECT ED FROM ci_lastname a2           /* template for subtree */
WHERE a2.ActVal = 'Jim'                 /* rooted at node 1418 */
INTERSECT           /* conjunction marker */
SELECT ED FROM ci_firstname a3, ci_lol a4 /* template for */
WHERE a3.ActVal like 'John%'           /* subtree rooted */
AND a4.ActVal like '555%'               /* at node 1420 */
AND a3.ED=a4.ED
)           /* end group marker */
)           /* end group marker */
)           /* FilterCondition closing section */
AND (da.parentda like 'John OR (da.els like 'John'
AND da.parentda like 'John')
AND da.ED=Store.ED
AND da.ED >= entryThreshold
ORDER BY size:ED

```

Regarding claims 2 and 21, Mandan teaches all of the claimed subject matter as discussed above with respect to claims 1 and 20, Mandan further discloses the step of *determining whether the table field is a multi-part table field including at least a first part corresponding to a look-up field, and a second part corresponding to a field*

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to be looked up, concatenated with said first part in a predetermined manner

(at1.AttrVal).

Regarding claims 3 and 22, Mandan teaches all of the claimed subject matter as discussed above with respect to claims 2 and 21, Mandan further discloses the step of *determining whether the second part is a look-up field, with a third part corresponding to a looked up field concatenated with said second part in a predetermined manner* (WHERE at1.AttrVal).

Regarding claims 4 and 23, Mandan teaches all of the claimed subject matter as discussed above with respect to claims 2 and 22, Mandan further discloses: *second part corresponding to a field to be looked up, is concatenated with said first part corresponding to a look-up field, employing one or more predetermined special characters* (at1.AttrVal).

Regarding claims 8 and 27, Mandan teaches all the claim subject matters as discussed above with respect to claims 1 and 20, and further discloses *SQL statement is a selected one of a SELECT, an INSERT, an UPDATE and a DELETE statement* (Col. 27, Lines 1-25).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 7, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mandan et al. [USP 6,748,378 B1], as applied to claims 1, 4 and 20, in view of Silberschatz et al. [Database System Concepts].

Regarding claims 5 and 24, Mandan teaches all of the claimed subject matter as discussed above with respect to claims 4 and 20, Mandan further discloses the step of *generating said sub query in a form of a SELECT statement enumerating identified table fields of said basis table, including aggregation functions to be performed on applicable ones of the identified table fields, including with said SELECT statement a first FROM clause enumerating said basis table* (Col. 27, Lines 1-25), but fails to teach *a GROUP BY clause enumerating again said enumerated table field or fields of the basis table that have not been identified as having aggregation functions to be performed*. However, GROUP BY is a predefined function in SQL for *enumerating again said enumerated table field or fields of the basis table that have not been identified as having aggregation functions to be performed*. (Silberschatz, Database System Concepts, page 123). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to include a GROUP BY function in order to group a result from the SELECT statement.

Regarding claims 7 and 26, Mandan teaches all of the claimed subject matter as discussed above with respect to claims 1 and 20, but does not explicitly disclose the claimed *aggregation function is a selected one of a counting function (COUNT), a minimum value identification function (MIN), a maximum value identification function (MAX), an average value computing function (AVG) and a value summation function (SUM)*. However, aggregation functions, such as *COUNT, MIN, MAX, AVG, and SUM*, are is a predefined function in SQL (Silberschatz, Database System Concepts, page 122). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to include an aggregation function in the step of generating SQL in order to return a single value from a collection of values.

Allowable Subject Matter

Claims 6 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance.

Regarding claims 6 and 25, USP 6,748,374, issued to Mandan et al., also teaches the claimed invention method and apparatus, but Mandan et al. fails to disclose or suggest the step of *enumerating field or fields to be selected from said grouped derivative table and said one or more target tables, a second FROM clause*

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enumerating said sub query, an AS clause enumerating an identifier of the grouped derivative table.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG Q. PHAM whose telephone number is 571-272-4040. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E. BREENE can be reached on 571-272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

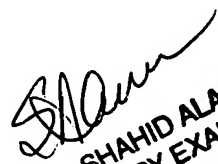
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HUNG Q PHAM
Examiner
Art Unit 2162

June 10, 2005



SHAHID ALAM
PRIMARY EXAMINER